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A NEW SPECIES OF LOTUS FROM THE MOUNT
HAMILTON RANGE, CALIFORNIA

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Lotus rubriflorus sp. nov. Herba annua albosericea, pilis longis; caules 1-5 aliquando decumbentes, 3-10 cm. longi; folia 10-16 mm. longa exstipulata, 4-foliolata imparipinnata, rachibus complanatis, foliolis lanceolatis acutis, 2-11 mm. longis; flores solitarii axillares subsessiles, 6-7 mm. longi; calyx dense pilosus lobis linearibus acuminatis, 4-5 mm. longis, corollam aequantibus; petala rubra in aetate caerulescentia; legumina pilosa, oblonga dehiscentia, 8-9 mm. longa.

Slender annual; stems 1-5 (mostly 2-4) from base, 3-10 (mostly 4-8) cm. long, usually somewhat decumbent; herbage pilose throughout with long, white, silky, somewhat appressed or spreading hairs; leaves 10-16 mm. long, exstipulate, imparipinnate; rachis flattened, about 1 mm. broad; leaflets 4, two appearing terminal, the remaining two on one side of the rachis, 2-11 mm. long, subsessile, lanceolate, acute, terminal leaflets often slightly falcate; flowers 6-7 mm. long, solitary, axillary, subsessile, usually bracteate; calyx 6-7 mm. long, densely pilose; tube 1.5-2 mm. long; lobes linear, acuminate, 4-5 mm. long, equalling corolla; petals glabrous, clear bright pinkish red (aster purple¹), fading bluish, claws white, banner 5 mm. long; wings shorter than or about equalling keel, posterior dorsal lobes large and very narrowly margined with white; keel 5 mm. long, apex somewhat pointed, body very narrowly margined with white dorsally and posteriorly; ovary densely pilose, dorsal margin straight, ventral margin curved; style pilose below, glabrous above, curved near base; legumes pilose, 8-9 mm. long, 2.5 mm. wide, oblong, stramineous; seeds 2-4, 2 mm. long, 2 mm. wide, irregularly lens

¹ Ridgway, R. Color standards and color nomenclature, plate 12. 1912.

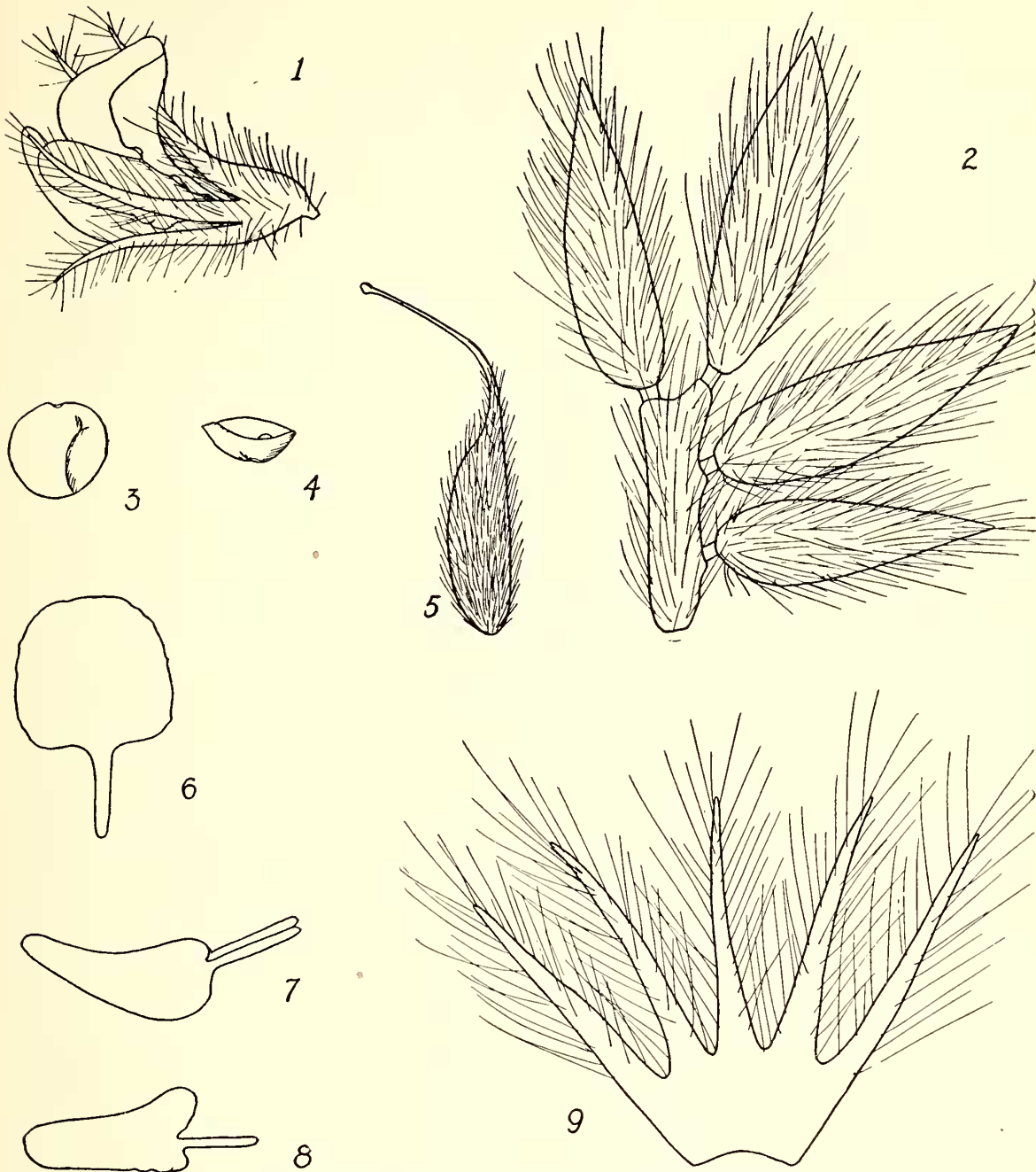


FIG. 1. *Lotus rubriflorus* H. K. Sharsmith: 1, flower; 2, leaf; 3, seed, lateral view; 4, seed, anterior view showing hilum; 5, ovary; 6, banner; 7, keel; 8, wing; 9, interior of calyx. All $\times 5$.

shaped, angled, notched at hilum, olive green to light brown, usually mottled with deeper brown, the surface often with a bronze sheen.

Type. Rolling hills at north end of Adobe Valley, Stanislaus County, Mount Hamilton Range, California, altitude 1600 feet, April 22, 1936, *A. M. Carter & H. K. Sharsmith 3544*, in flower (Herb. Univ. Calif. No. 605765; isotypes, Gray Herb., U. S. Nat. Herb., Mo. Bot. Gard., Stanford, Kew). Topotype. June 5, 1938, *A. M. Carter & J. L. Morrison 1403*, in fruit (Herb. Univ. Calif.; duplicate topotypes deposited with isotypes).

Lotus rubriflorus has been found only at the type locality, but within the one known colony the plants are abundant. Collections made two years apart suggest that the species is not merely transient at this locality. It inhabits sparse grassland in an open stand of *Quercus Douglasii*, growing in association with the common vernal annuals of the region, such as *Lotus subpinnatus*, *L. humistratus*, *Orthocarpus attenuatus*, *Microseris linearifolia*, *M. sylvatica*, *Pentachaeta exilis*, *Plagiobothrys canescens*.

On the basis of the pinnate, short, exstipulate leaves, the small, solitary flowers, and the straight, beakless, dehiscent legumes, *Lotus rubriflorus* belongs to the subgenus *Acmispon* (Raf.) Ottley (Univ. Calif. Publ. Bot. 10: 197. 1923). Within this subgenus, *L. rubriflorus* is most closely associated with *L. denticulatus* Greene, *L. subpinnatus* Lag., and *L. humistratus* Greene, these species all having dilated leaf rachises, few, inequilateral leaflets, sessile flowers, and flattened, angled seeds.

Although growing in association with *Lotus humistratus* and *L. subpinnatus*, *L. rubriflorus* is a very distinct, easily recognized species. It most closely resembles *L. humistratus* in pubescence, length of calyx lobes, and shape and size of legumes, but is more pilose, and the calyx lobes are longer. It differs strikingly from *L. humistratus*, as well as from *L. denticulatus* and *L. subpinnatus*, in the lanceolate leaflets. Furthermore, the flower color of *Lotus rubriflorus* is exceptional; in North American representatives of the genus the corolla is characteristically whitish or yellow, although often veined, streaked or suffused with red, pink, or purple, or may fade red. In *L. rubriflorus* the corolla is a uniform red. The following key brings out these distinguishing features and separates *L. rubriflorus* from those species to which it is most nearly related:

Leaflets obovate, often obtuse; flowers cream color to yellow, tinged with or fading red or purple	<i>L. denticulatus</i> <i>L. humistratus</i> <i>L. subpinnatus</i>
Leaflets lanceolate, acute; flowers bright pinkish red, fading bluish	<i>L. rubriflorus</i>

State College of Washington,
Pullman, Washington,
February, 1939.

REVIEWS

A Monograph of the Genus Calochortus. By MARION OWNBEY. Annals of the Missouri Botanical Garden. Volume XXVII. Pp. 371-560. St. Louis, December 10, 1940.

The genus *Calochortus*, ranging from Nebraska to the Pacific and from Guatemala to British Columbia, is treated by Dr. Ownbey in three sections, *Eucalochortus*, *Mariposa* and *Cyclobothra*.